Pressure Relief Valve
User Manual
701-00006

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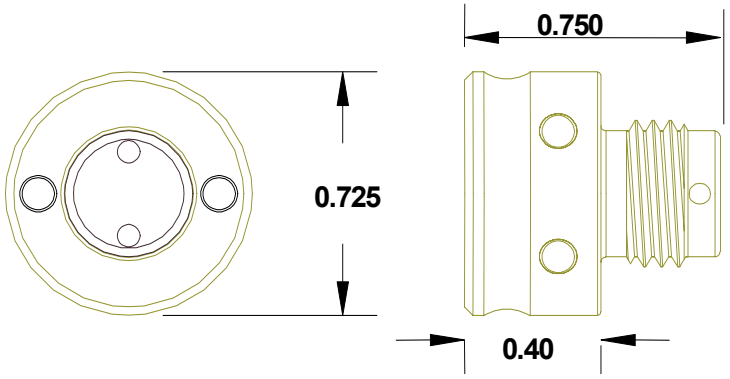
Introduction

Congratulations on your purchase of the DeepSea Power & Light Pressure Relief Valve.

DeepSea's universal pressure relief valve can be used on instrument housings, battery packs, and other applications requiring venting. Made from titanium and measuring only 1.85cm (0.725 in.) diameter by 1.91cm (0.75 in.) overall length, this valve is rated to full ocean depth. The valve's release pressure can be easily adjusted, and can also serve as a vacuum purge port. A dry spring design is used; all wet parts are titanium.



Specifications

MECHANICAL

Material:	6AL-4V titanium
Diameter:	1.85 cm (0.725 in.)
Length:	1.91 cm (0.75 in.)
Weight in Air:	11.7 g (0.42 oz.)
Threads:	7/16”-20, with O-ring face seal

ENVIRONMENTAL

Depth:	20,000 psi (full ocean depth)
Temperature:	-20 deg. C to 200 deg. C (-4 deg. F to 392 deg. F)

PRV Cracking Pressure Adjustment

1 Using a small spanner wrench gently turn PRV adjusting valve clockwise to full stop.

2 Refer to **Cracking Pressure Chart** to correlate number of adjustment valve turns to desired setting listed in PSI. Refer to chart curve #1 for in air settings and curve #2 for in water settings.

3 Slowly turn adjustment valve clockwise to desired setting

CRACKING PRESSURE CHART
Setable 2 psi to 15 psi (or closed)

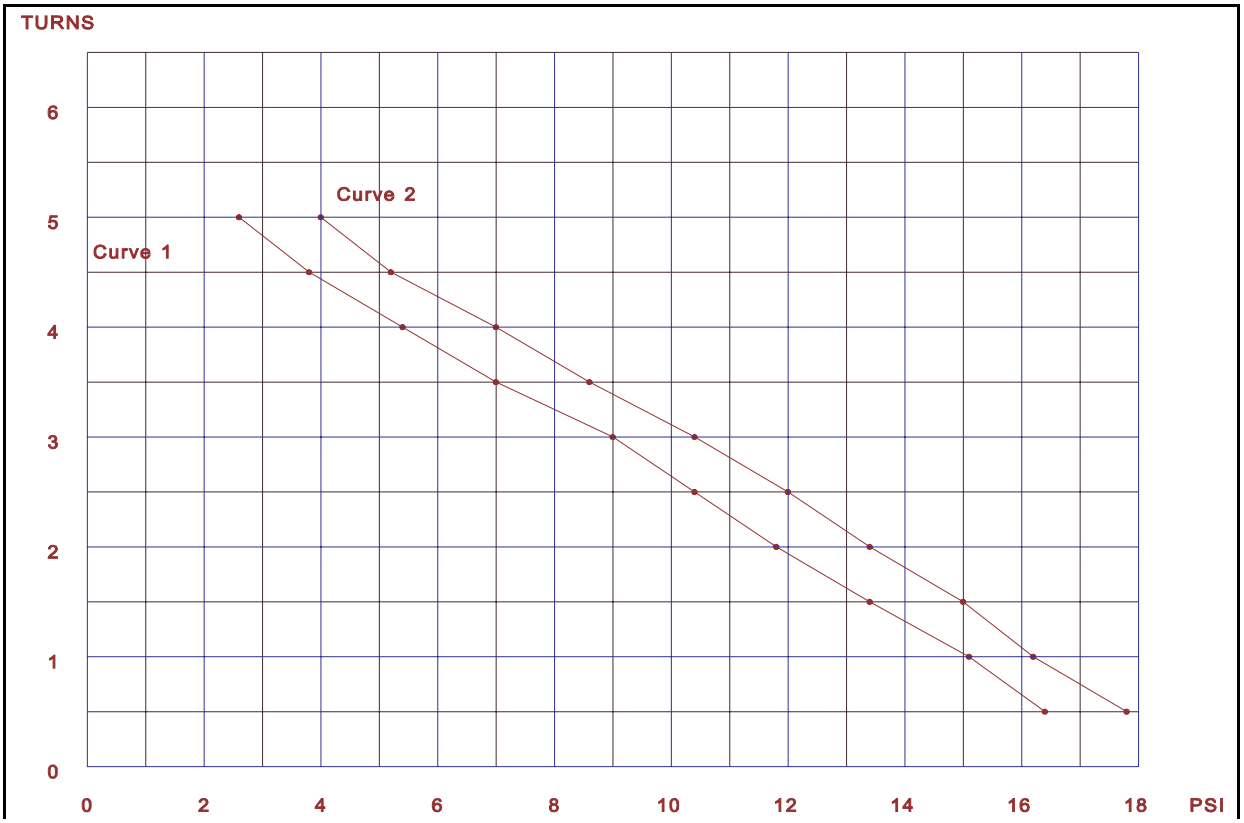


Chart shows pressure for # turns away from closed position and indicates the increase in setting from testing in Air (curve 1) to testing in Water (curve 2)

Installation

1. Drill and tap $^{7}/_{16}$ –20 hole into housing insuring that there is a minimum $^{3}/_{8}$ of an inch thread depth.
2. Insure that o-ring sealing surface is smooth and clean. (Requires o-ring seating surface finish of 32 or better)
3. Grease O-ring using DC-111 or DC-4 silicone lubricant. Only a thin film of lubricant is necessary.
4. Apply a small amount of locktite 242 on threads of pressure relief valve (caution, do not allow any to drip onto o-ring)
5. Use installation tool –701-00020-02 or small 3/32 spanner wrench to screw pressure relief valve into housing. Use hand torque not to exceed 100 inch/pounds

Important Notes

If the venting of internal pressure includes debris {silica gel particles, metal shavings, battery chemicals, etc} the PRV may fail. Failure may take two forms:

1. Debris may pile up inside the PRV and clog it resulting in over pressuring the volume to be protected.

2. Debris may prevent resealing when relief flow ceases.

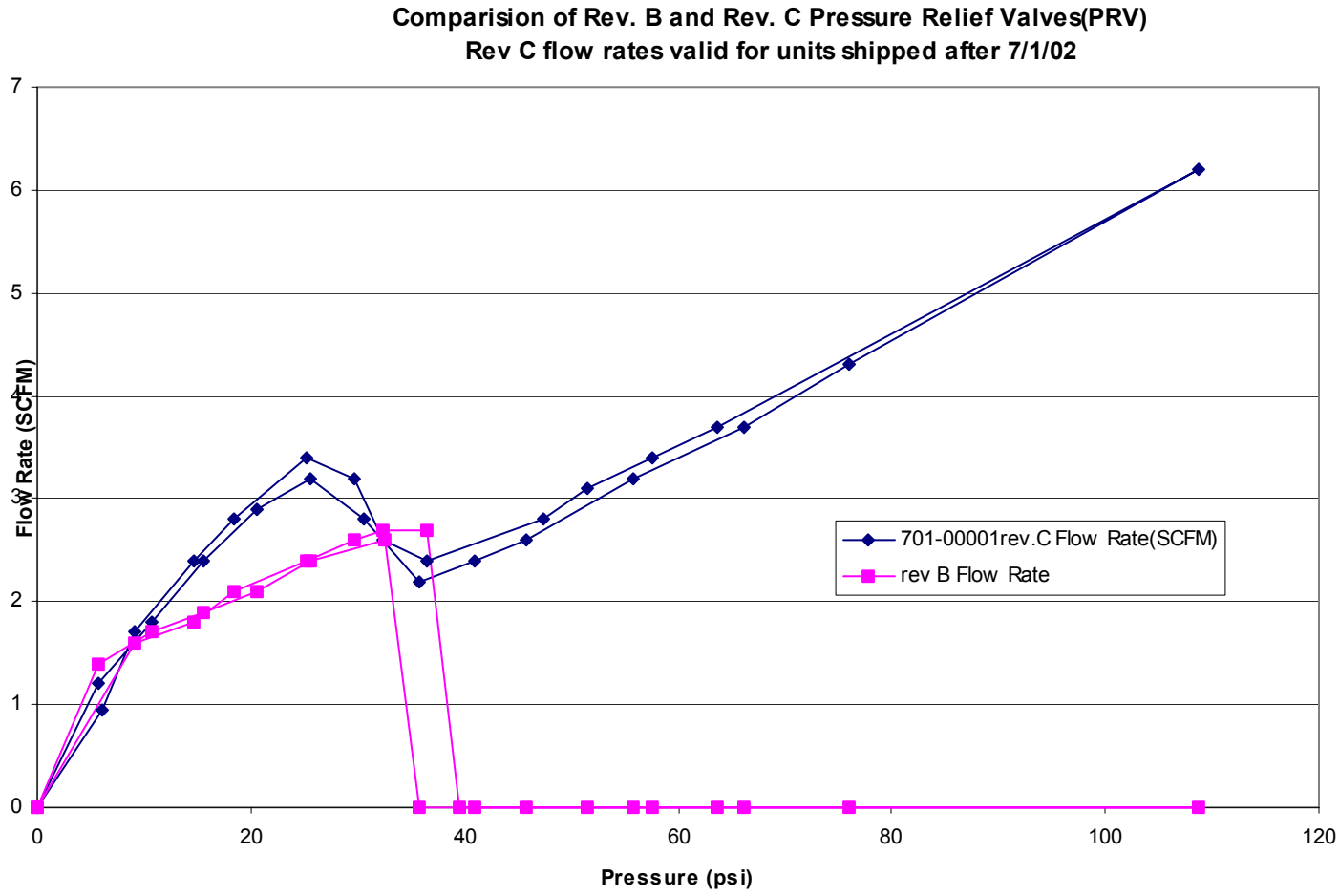
If the equipment produce debris, it is critical that screens or filters of sufficient area are provided to handle the volume of debris produced.

Vacuum Purge Port Instructions

1. Loosen the valve stem so it is only at ~1 psi or less. Count turns so you can reset it later to the desired cracking pressure.
2. Snap on the optional vacuum fitting (DSPL p/n 701-00006) and pull a vacuum.
3. Pop off the fitting, the valve seats and seals due to the pressure differential.
4. Tighten the valve stem (while sealed) back to the desired cracking pressure, be SURE to not over-tighten or the valve will be locked shut and not vent.

If a full vacuum (about 15 psi) is not needed, you can leave the valve set to ~2-4 psi and not have to loosen and tighten it.

PRV Forward Pressure/Flow Data



6. Terms and Conditions of Sale

No terms or conditions, other than those stated herein, whether contained in customer's purchase order or shipping forms or elsewhere, and no agreement or understanding, oral or written, in any way purporting to modify or negate these terms and conditions shall be binding on DeepSea Power & Light, Inc.

Acceptance of Orders

A. Acceptance of binding purchase orders is subject to final written approval by DeepSea Power & Light, Inc.
B. DeepSea Power & Light, Inc. will accept orders and bill in accordance with list prices and terms, even though incorrect list prices, discounts and terms may appear on the Purchase Order.

Terms

Upon approved credit the following terms will apply:

A. Standard terms are net cash 30 days from date of invoice, unless otherwise specified. Invoices bear the date of shipment and are mailed from San Diego, CA within one business day of the shipment.
B. Any portion of the Invoice amount which has not been paid within 30 days of the invoice date will accrue a monthly service charge equal to the maximum rate permitted under Section 1, Article XV of the California Constitution as amended by Proposition 2 effective November 7, 1979 (i.e., Federal Reserve discount rate plus five (5) percent per annum) commencing 31 days after the invoice date. In the event of any litigation arising out of this contract or any efforts by seller to enforce any of the terms of this contract, or to receive payment of any sum under this contract, the prevailing party shall be entitled to recover its reasonable attorney's fees and costs. This contract shall be interpreted in accordance with the laws of the State of California and venue for any dispute arising out of this contract shall be San Diego County, California.

Title and Risk of Loss

A. Unless otherwise specified in accepted purchase order, all products are shipped F.O.B. DeepSea Power & Light, Inc. plant, San Diego, CA and title to the property passes to the buyer at the time of shipment. Buyer assumes all risk of damage to or loss or destruction of said property and no loss, injury or destruction of said property shall release buyer from the obligation to pay for this shipment.
B. Unless otherwise specified in accepted purchase order, DeepSea Power & Light, Inc. shall have the option of partial or complete shipment of orders, and shall have the right to select the date of shipment, type of carrier, and routing of shipment on behalf of Customer. DeepSea Power & Light, Inc. will make best efforts to meet quoted shipment dates, but does not guarantee to ship products within the time quoted. DeepSea Power & Light, Inc. shall not be held responsible for any failure to make delivery of all or any part of product or nonperformance of services attributable to governmental action, strike or other labor dispute, riots, storm, flood, epidemic, fire damage to or destruction in whole or in part of products, lack of or inability to obtain raw materials, labor fuel, or supplies, or any act of God or other cause, contingency or circumstances within or without the United States not subject to DeepSea Power & Light, Inc.'s control which prevents or hinders manufacture or delivery of product or performance of services.

Termination

Purchase Orders accepted by DeepSea Power & Light, Inc. are not cancelable by Buyer unless all details are agreed upon in writing by DeepSea Power & Light, Inc. and Buyer, including Buyer's agreement to assume termination charges required by DeepSea Power & Light, Inc.

Returns

A. No product will be accepted for return, repair or replacement without first obtaining a Return Merchandise Authorization (RMA) number.

The following information will be required:

1. Date of Shipment
2. Invoice Number and Sales Order Number
3. Customer Purchase Order Number
4. Any relevant technical data for failure description and circumstances.

B. New, unused, undamaged, fully operational, standard stock parts may be returned for credit, only with prior written authorization, and will be subject to a $30.00 or 15% minimum handling charge, whichever is greater. Items must have shipped from DeepSea Power & Light, Inc. no more than 30 days prior to requesting an RMA. Return freight charges shall be paid for by Customer. Non-standard or used parts are not returnable.
C. Any return, repair or replacement shall be subject to DeepSea Power & Light, Inc. Quality Assurance acceptability.
D. Buyer assumes all risk of damage or loss or destruction of the property, which is accepted for return, repair, or replacement as provided above. It is expressly agreed that all risks of loss are borne by Buyer from and after the time of shipment from Seller to Buyer.

Notice

The technical drawings and data published in our manual, bulletins or literature is not guaranteed. It is considered sufficient technical data to allow proper identification of equipment type, size and use for ordering purposes. All drawings and measurements are approximate and not to scale. Performance and function for which the product is intended will depend upon lighting conditions, visibility, cable size and termination. Technical data is subject to change without notice. Detailed engineering information is available upon request. DeepSea Power & Light, Inc. assumes no responsibility for proper selection or installation of its products.

Fair Labor Practices

We hereby certify that products and services are produced in compliance with all applicable requirements of Sections 6, 7 and 12 of the Fair Labor Standards Act of 1938 as amended, and of regulations and orders of the United States Department of Labor issued under Section 14 thereof. DeepSea Power & Light, Inc. complies with Executive Order 11256 prohibiting discrimination in employment because of race, creed, sex, color, or national origin.

Limited Warranty

Seller warrants that the goods (except internal electronic components) sold under this contract will be free from defect in material and workmanship for a period of one year from the date of shipment from the factory, if they have been properly used. Internal electronic components are warranted for 90 days from the date of shipment from the factory, if they have been properly used. This warranty will be limited to the repair or replacement of parts and the necessary labor and services required to repair the goods. IT IS EXPRESSLY AGREED THAT THIS WARRANTY WILL BE IN LIEU OF ALL WARRANTIES OF FITNESS AND IN LIEU OF THE WARRANTY OF MERCHANTABILITY. This warranty is the exclusive and only warranty to pass with the goods under this contract. No agent, employee, or representative of the Seller has any authority to bind Seller to any information, representation, or warranty concerning the goods sold under this contract, and unless an affirmation, representation, or warranty made by an agent, employee, or representative is specifically included within this contract, it will not be enforceable by Buyer. If notice of defect is given to DeepSea Power & Light, Inc. within such 90 day or one year warranty period, the sole obligation of DeepSea Power & Light, Inc. shall be to furnish new or repaired parts free of charge in exchange for parts which have been proved defective and does not include any other costs such as the cost of removal of the defective part, installation, labor, or consequential damages of any kind, the exclusive remedy being to require DeepSea Power & Light, Inc. to furnish such new parts. Under no circumstances shall the Buyer be entitled to recover any incidental damages as that term is defined in Commercial Code §2715.